

WHAT IS CLAIMED IS:

1. A vehicle navigation method used in a consumer service center, the vehicle navigation method comprising the steps in series of:

(A) receiving the position data of a starting point and the position
5 data of a destination point;

(B) searching at least one traveling route from said starting point to said destination point;

(C) selecting a geo area covering said at least one traveling route, in which said geo area is defined by at least two position parameters and
10 divided into a plurality of geo zones subject to a pair of predetermined 2D (two-dimensional) grid number, said geo zones each being respectively defined with a respective pair of 2D (two-dimensional) index subject to a 2D (two-dimensional) array rule;

(D) searching multiple traveling zones corresponding to the geo
15 zones which including said at least one traveling route therein;

(E) establishing a simple navigation information, said simple navigation information comprising said at least two position parameters, said pair of predetermined 2D grid number, and the pairs of 2D indexes of said traveling zones; and

20 (F) transmitting said simple navigation information to a car.

2. The vehicle navigation method as claimed in claim 1, further comprising the steps of:

(G) receiving from said car the current position data of said car; and

(H) displaying a monitoring 2D (two-dimensional) grillwork on a

display, in which said monitoring 2D grillwork being divided into a plurality of 2D (two-dimensional) grids subject to said pair of predetermined 2D grid number wherein said 2D grids each being respectively defined with a respective pair of 2D (two-dimensional) index
5 subject to said 2D array rule, displaying a plurality of traveling grids in said monitoring 2D grillwork corresponding to the 2D grids having their pairs of 2D indexes same with those of said traveling zones, and displaying a current grid in said monitoring 2D grillwork corresponding to the 2D grid of the current position of said car.

10 3. The vehicle navigation method as claimed in claim 2, further comprising the step of (I) enabling said consumer service center to connect to said car through a wireless communication device and then to guide said car moving forward.

 4. The vehicle navigation method as claimed in claim 1, wherein
15 said consumer service center has installed therein a wireless communication device for transmitting said simple navigation information to said car wirelessly in Step (F).

 5. The vehicle navigation method as claimed in claim 4, wherein said wireless communication device is a GPRS (General Packet Radio
20 Service) module.

 6. The vehicle navigation method as claimed in claim 1, wherein said at least two position parameters in Step (C) are the position coordinates of at least two boundary points in a rectangular plane coordinates system; said geo area is defined by the position coordinates of said at least two

boundary points and divided into said geo zones by said pair of predetermined 2D grid number subject to said rectangular plane coordinates system.

7. The vehicle navigation method as claimed in claim 6, wherein
5 said rectangular plane coordinates system is the longitude/latitude plane coordinate systems of the earth.

8. The vehicle navigation method as claimed in claim 1, wherein the pairs of 2D indexes of said geo zones in Step (C) are defined subject to a 2D (two-dimensional) matrix array rule.

10 9. The vehicle navigation method as claimed in claim 1, wherein said consumer service center has installed therein a server and an electronic map database linked to said server.

10. The vehicle navigation method as claimed in claim 1, wherein said consumer service center has installed therein a memory, and said
15 simple navigation information in Step (E) is stored in said memory.

11. A vehicle navigation system installed in a car, comprising:

a GPS (global positioning system) module adapted to calculate the current position data of said car;

memory means, said memory means having stored therein a simple
20 navigation information which comprising at least two position parameters, a pair of predetermined 2D (two-dimensional) grid number, and multiple pairs of 2D (two-dimensional) indexes;

processor means adapted to read said at least two position parameters from said memory means and to define a 2D (two-dimensional)

grillwork by means of said at least two position parameters, to read said pair of predetermined 2D grid number from said memory means and to divide said 2D grillwork into a plurality of 2D (two-dimensional) grids each having a respective reference point position and a respective pair of 2D index defined subject to a 2D (two-dimensional) array rule, to fetch the current position data of said car from said GPS module and to compare the current position data of said car to the reference point positions of said 2D grids so as to calculate the pair of 2D index of a current grid corresponding to the current position of said car; and

output means adapted to display said 2D grillwork, said current grid, and a plurality of traveling grids having their pairs of 2D indexes same with the pairs of 2D indexes stored in said memory means.

12. The vehicle navigation system installed in a car as claimed in claim 11, further comprising a wireless communication device adapted to communicate with a remote consumer service center wirelessly.

13. The vehicle navigation system installed in a car as claimed in claim 12, wherein said car is wirelessly connected to said remote consumer service center through said wireless communication device to receive said simple navigation information from said remote consumer service center.

14. The vehicle navigation system installed in a car as claimed in claim 12, wherein said wireless communication device is a GPRS (General Packet Radio Service) module.

15. The vehicle navigation system installed in a car as claimed in claim 11, wherein the pairs of 2D indexes of said 2D grids are defined

subject to a 2D (two-dimensional) matrix array rule.

16. The vehicle navigation system installed in a car as claimed in claim 11, wherein said at least two position parameters are the position coordinates of at least two boundary points in a rectangular plane coordinates system; said processor means uses the position coordinates of
5 said at least two boundary points to define said 2D grillwork, and divides said 2D grillwork into said 2D grids by said pair of predetermined 2D grid number subject to said rectangular plane coordinates system.

17. The vehicle navigation system installed in a car as claimed in
10 claim 16, wherein said rectangular plane coordinates system is the longitude/latitude plane coordinates system of the earth.

18. The vehicle navigation system installed in a car as claimed in claim 16, wherein the position coordinates of said at least two boundary points include $P_{e1}(X_{e1}, Y_{e1})$ and $P_{e2}(X_{e2}, Y_{e2})$ respectively defined as the
15 lower left corner and upper right corner of said 2D grillwork, and the coordinates of the reference point positions of said 2D grids $R_{ij}(X_{ij}, Y_{ij})$, $i=0\dots m, j=0\dots n$ define the lower left corner of the respective 2D grids and have the relationship of:

$$X_{ij} = X_{e1} + i \frac{(X_{e2} - X_{e1})}{m+1} \text{ and } Y_{ij} = Y_{e1} + j \frac{(Y_{e2} - Y_{e1})}{n+1}, \text{ and}$$

20 said processor means calculate the pair of 2D index p, q of the current grid C_{pq} corresponding to the current position coordinates $P_c(X_c, Y_c)$ of said car subject to the equations of $p = \left\lceil (m+1) \frac{(X_c - X_{e1})}{(X_{e2} - X_{e1})} \right\rceil$, and $q = \left\lceil (n+1) \frac{(Y_c - Y_{e1})}{(Y_{e2} - Y_{e1})} \right\rceil$.